

FLIGHT

The
**AIRCRAFT
ENGINEER
&
AIRSHIPS**

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 713. (No. 34, Vol. XIV.)

AUGUST 24, 1922

[Weekly, Price 6d.
Post free, 7d.]

Flight,

The Aircraft Engineer and Airships

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C. 2
Telegrams: Truditur, Westcent, London. Telephone: Gerrard 1828

Annual Subscription Rates, Post Free:

United Kingdom .. 30s. 4d. Abroad .. 33s. 6d.*

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates

* European subscriptions must be remitted in British currency

CONTENTS

	PAGE
Editorial Comment	
The Circuit of Britain	477
The Coupe Deutsch	478
The Gliding Competitions	478
French and German Gliding Competitions	479
London Terminal Aerodrome	480
Gordon-Bennett Balloon Race	481
Air Mail Services to India	482
The King's Cup for the Circuit of Britain	483
Hanriot Two-Seater Fighter, "H. 15"	484
The Coupe Deutsch	485
The Goodyear "A.C." Non-Rigid Dirigible	486
The Dornier "Dragon-Fly" Flying Boat Landing on the Ice	487
Correspondence	488
Royal Air Force	489
R.A.F. Appointments	489
Notices to Airmen	489
The London Aero-Models Association	490
Side-Winds	490

EDITORIAL COMMENT.



The Circuit of Britain

Up to the present, the rules which are to govern the Circuit of Britain Race for the King's Cup have not been announced. All that is definitely known is that the race will be a handicap race, but that is scarcely sufficient. In view of the fact that, in all probability, most, or at any rate many, of the competing machines will be commercial ones, it would appear that consideration should be given to the number of passengers, or their equivalent in ballast, carried. What we have in mind is a set of rules somewhat on the lines of those governing the competition for the Coupe Lamblin. According to these, it will be remembered, the amount of start allowed passenger-carrying machines is increased by a certain number of minutes for each passenger carried. The result is that a large machine, carrying 15 or 20 passengers, has a better chance, under the rules, than has a very fast single-seater with an engine of 400 h.p.

We do not necessarily suggest that the fast machine should be handicapped unduly, but in view of the expected preponderance of commercial machines, and the fact that such a race could not well be undertaken on a purely racing machine in any case, it would appear advisable to take into consideration load as well as speed. We admit that the handicapping will not be easy. It never is, but the Aerial Derby showed that, with one or two exceptions, the handicapping was extremely close to actual performance, and it should not be impossible to get equally good results in the Circuit of Britain.

The entries list closes on August 28, and already a number of machines has been entered. It is not yet possible to express an opinion of the size of the "field" which will face the starter on September 8, but according to enquiries there seems reason to hope that the number of machines entered will be very considerable. We understand that there is a possibility of the Supermarine Schneider Cup winner, fitted with amphibian gear, taking part in the race. Possibly a Vickers "Viking" may also be entered,

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

1922.

Sept. 2-17.... International Concours Aviatique, Rotterdam
Sept. 8-10.... 1,000 Miles Race round Britain for the King's Trophy

Sept. Tyrrhenian Cup, Italy

Sept. Italian Grand Prix

Sept. or Oct. R.Ae.C. Race Meeting, at Waddon

Sept. 30 Coupe Deutsch (300 kil.)

Dec. 15-

Jan. 2 Paris Aero Exhibition

1923.

June International Air Congress, London

Dec. 1 Entries Close for French Aero Engine Competition

1924.

Mar. 1 French Aero Engine Competition.

Mar. 15 Entries close for Dutch Height Indicator Competition

which would certainly add to the interest. Otherwise it appears that this year's Circuit of Britain will be flown mainly on land machines. As we have previously pointed out in these columns, this is regrettable, especially when it is remembered that, even in 1914, we could muster quite a large number of seaplanes for this race. That conditions are such as to make this impossible in 1922 is a serious reflection on the manner in which we have allowed the seaplane to be neglected, and gives food for thought.

• • •

The Coupe Deutsch Elsewhere in this issue we publish a list of the entries for the Coupe Deutsch, which is to be flown for at Villesauvage aerodrome, near Etampes, on September 30 next. It had been hoped that among the British entries would be the new Bristol racer with Bristol "Jupiter" engine. The list discloses the fact that the "Mars I" of the Gloucestershire Aircraft Co. is the only British entrant, and as the list is now finally closed the Bristol will not fly in the race. This is very regrettable, as to rely upon one machine, no matter how good, necessarily means running a considerable risk of losing the race. With but one representative, the least little mishap may destroy all our chances.

We are not presuming to blame the Bristol Company for not entering the machine. On the contrary, until a fast racing machine is absolutely "right" in every way the best policy is undoubtedly to refrain from entering it. We do not know what are the reasons which have prevented the Bristol from being entered, but it may be taken for granted that they are good and sufficient, and we can only regret the fact.

As regards James' chances in the race, our opinion is that, barring accidents, he has a sporting chance of winning. There has been a tendency rather to discount British machines in pure speed races, but the Supermarine-Napier victory at Naples has demonstrated that a British machine is still capable of holding its own against the fastest machines of other nations, and we think that the "Mars I," cleaned up and fitted with special racing wings, should be able to put up a very creditable fight against the French and Italian machines entered. James' landing after winning the Aerial Derby was extremely fast. In fact, James told us after the race that he had never landed the machine so fast before, and that it could be, and had been, landed at very little more than half that speed. If that is so, it would appear that, when necessary, James could land "Mars I" at the higher speed, and thus increase his top speed.

The French machines appear to be mainly the same as those of last year. That is to say, the two really "dangerous" ones will be the Nieuport "Sesquiplans," flown by Lecoq and Lasne respectively. It is already known approximately what speed these can do, and even allowing for some slight improvement upon their performance last year, the British machine should, we think, stand at any rate a sporting chance. Altogether we are not without hopes that the Coupe Deutsch as well as the Coupe Schneider may be brought to this country. Under the rules this would not mean that the race would be held in England, but the effect could not fail to be very favourable even at that.

The Gliding Competitions

During the last couple of weeks, and more especially during the last few days, the eyes of the world have been focussed upon the gliding competitions that are taking place simultaneously in France and Germany. The marvellous durations attained by the German pilots, Herr Martens and Herr Hentzen, have come as a revelation to most people, and compared with them the French flights made at Clermont-Ferrand dwindle into insignificance. It should not be forgotten, however, that the Germans have had several years' experience in this form of flying, while the French had to begin at the bottom, and find their way slowly and step by step.

The fact is inclined to be overlooked that soaring is a question of piloting much more than of machine design. That this is so has been demonstrated by the way in which Bossoutrot, for instance, has gradually increased the duration of his flights as he gained experience. Similarly, the glider on which Herr Martens and Hentzen made their historic flights of one and two hours respectively was, to all intents and purposes, the same as that used by Martens in last year's Rhön competition. Alterations have been made, it is true, but we are quite convinced that the handling of the machine, the power to anticipate and take advantage of wind fluctuations, etc., counts for much more than does the design of the machine. The strain is admitted by Herr Martens to have been very great, and in the very nature of things this must be so. Whether some day a glider may be evolved which will do automatically what now the pilot has to do is another thing. It is possible. Dr. Nimführ appears to have ideas of his own on that subject, but in the meantime soaring must be mainly a question of personal skill.

In some quarters the results obtained have been hailed as ushering in a new era in flying. With this view we do not agree. As a sport, and from the scientific standpoint, gliding and soaring are no doubt of very great value, but to presume that the day is approaching when an engineless aircraft will be able to go wherever it is desired is to read into the results something which the facts do not warrant. As a sport, gliding and soaring may well become popular, and we shall hope to see the art taken up strenuously in this country. It need not be very costly, and it should certainly be "good fun." From the scientific point of view, much may be learned about the behaviour of the air over obstacles, and meteorological information may be gathered which will have its value, but the direct application of gliding results to improvement in power-driven machines is not yet in sight. The conditions are so totally different that there is no reason to suppose that the machine which makes the best glider would also make the best commercial aeroplane.

This is in no way to be taken as indicating a wish on our part to belittle what has been done. Far from it. We admire the German performances enormously, and appreciate that, considering their handicaps, the French also have done well. And we congratulate all. But we do wish to point out that, just at present, there is no need to get alarmed, nor to visualise the day when millions of German gliders will sail across and drop bombs on London. The wish that has been expressed in certain quarters to suppress the German gliding experiments almost suggests that some such naive ideas may be entertained.

THE SOARING AND GLIDING EXPERIMENTS

France Learning, but Germany Well Ahead

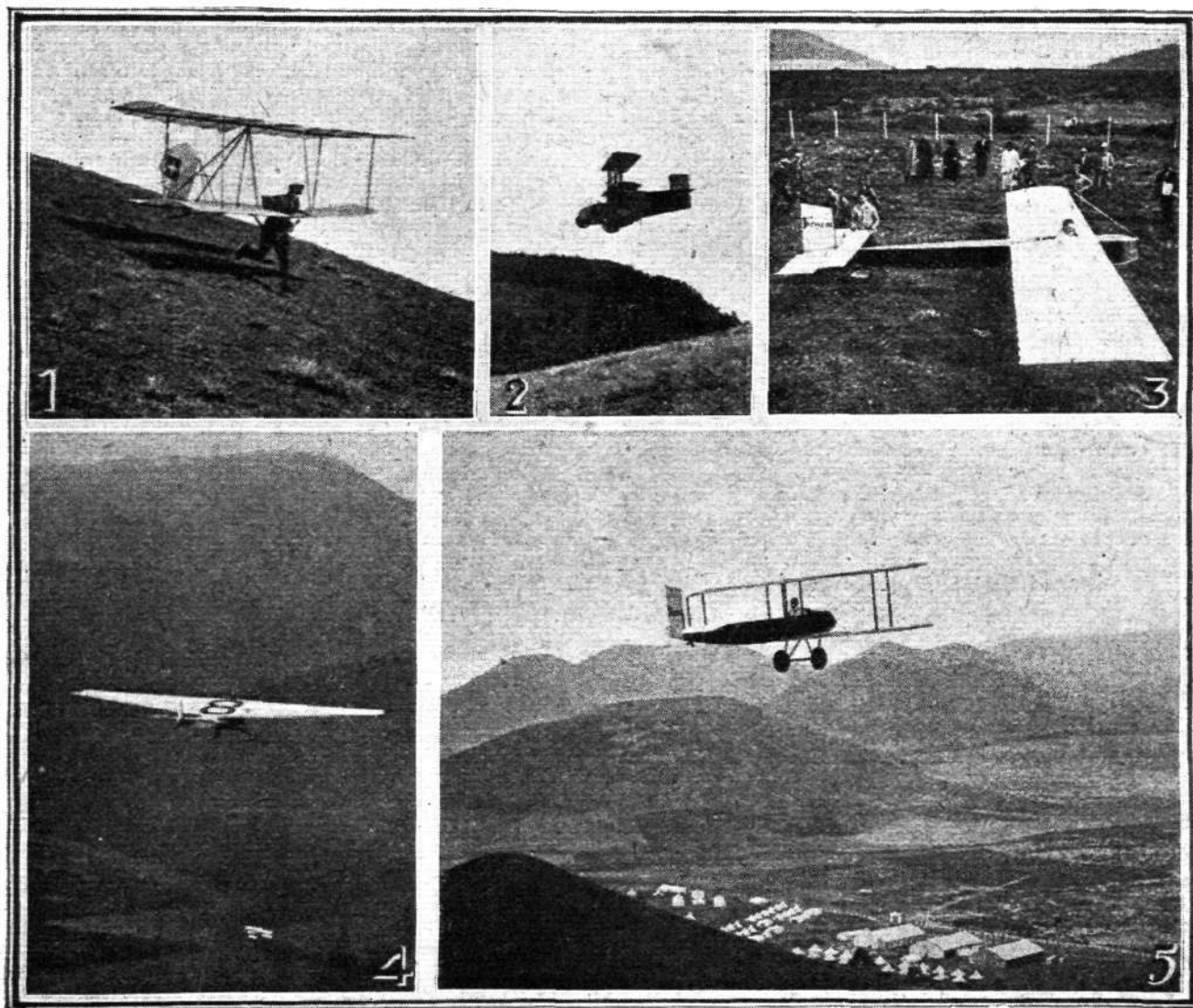
CONSIDERABLE interest attaches to the gliding and soaring competitions which have been taking place during the last couple of weeks in France and Germany. The scene of the French competition is the district around the Puy de Combe-grasse, near Clermont-Ferrand, and the German experiments, as in previous years, are taking place in the Rhön Mountains. Considered as a first effort, the French results are distinctly encouraging, although they are certainly put entirely in the shade by the astonishing flights made by German experimenters. No less than 50 machines were entered for the French competition, but of these several have, apparently, failed to pass the "acceptance tests," owing partly to unfavourable weather and also, no doubt, to the inexperience of the pilots. There is no doubt that these experiments are considerably more of a test of the pilots than of the machines. Until machines can be designed which will automatically adjust themselves to the ever-changing conditions the duration of motorless flights must remain mainly a question of personal skill. And it should be remembered that the German pilots have had several years' experience, whereas the majority of the competitors at Clermont-Ferrand are "riding" engineless machines for the first time. It is, of course, obvious that the handling of a glider must, to effect a prolonged flight, be essentially different from that of a power-driven machine. That the French pilots are rapidly learning is demonstrated by the way in which the duration of flights has gone up from the first days of the competition until now, at the time of

going to press, Bossoutrot holds the lead with a duration of 5 mins. 18 secs.

In Germany Herr Martens first astounded the world by keeping aloft for 1 hr. 6 mins., but his performance was soon eclipsed by Herr Hentzen, who remained aloft just over two hours. This performance is simply astonishing, and gives an indication of the extent to which soaring flight may ultimately be developed. It is small wonder that among the spectators at Rhön there were those who seriously believed that Herr Hentzen must have had a motor tucked away somewhere on his machine.

Herr Martens, during his one-hour flight, is stated to have sailed over his starting-point nine times, while the distance covered in the straight flight with which the performance terminated was one of about 6½ miles. Herr Hentzen, after his two-hour flight, alighted at the same spot as did Herr Martens on the previous day, but counting in the distance which the machine must have covered while aloft and cruising around, the flight must easily constitute a world's record, both for duration and distance.

With regard to the machines used, it is understood that the one used by Martens and Hentzen is the same as that used by Martens last year. This machine, it will be remembered, was a cantilever monoplane, which was characteristic on account of its novel undercarriage. This simply took the form of two footballs mounted on an axle, and is stated to have given very good results. This year the wing span has



Courtesy of *Le Miroir des Sports*.

FROM THE FRENCH GLIDING COMPETITION AT CLERMONT-FERRAND : 1. Chardon, the Swiss representative, starting off by running down the hill. 2, Sardier on the Clement triplane in flight. 3, The Farman "Moustique" on which Bossoutrot has made some excellent flights. 4, Coupet well aloft on his cantilever monoplane glider. 5, Bossoutrot soaring out over the Camp Mouillard on the Farman Sport biplane. This machine has to its credit the greatest aggregate duration of the meeting.

been cut down somewhat and other minor alterations effected, but essentially the machine is the same, which tends to confirm the opinion expressed above that duration in sailing flight is mainly a matter of personal skill on the part of the pilot. No particulars are available of the other German machines entered this year, but in a subsequent issue we hope to be able to publish illustrations and particulars.

The French machines show a great deal of originality, but, as was the case with last year's German competition, the freaks do not appear to have done very much, the majority of the successes having gone to machines of more or less orthodox design. Thus the Farman gliders entered are simply the Farman "Sport" and the Farman "Mosquito," with engine removed and the pilot placed farther forward so as to balance the machine. The flight by Bossoutrot of five minutes was made on the "Mosquito," a small monoplane. The Clement triplane has been shown at the Paris Salon both as a power-driven machine and as a glider.

The machine flown by Chardon (Swiss) is a biplane without under-carriage, and the pilot sits on a strap suspended from the lower plane. To get into the air he runs down the hill, much as did Lilienthal in his pioneer experiments many

years ago. Control is mainly a matter of dexterity on the part of the pilot.

The American glider is a monoplane, with the tail carried on an open girder. It was designed and built by the Aeronautical Engineering Society, and in the competitions it was piloted by Mr. Allen. In the earlier part of the meeting this machine held the lead as regards total duration, but during the later stages was outdistanced by other competitors, notably Chardon on the Swiss glider, and, most recently, by the Farman "Sport" and Farman "Moustique."

At the moment of going to press the position of competitors, as regards total duration, is as follows: 1st, Farman "Sport" (Bossoutrot and Paulhan) (48 mins. 5 secs.); 2nd, Farman "Moustique" (Bossoutrot) (43 mins. 18 secs.); 3rd, Chardon (27 mins. 53 secs.); 4th, Coupet (24 mins. 5 secs.); 5th, Descamps (17 mins. 49 secs.); 6th, Douchy (14 mins. 12 secs.); 7th, Allen (12 mins. 27 secs.).

The prize awards are as follows: Duration, 1, Farman (Bossoutrot), 5 mins. 18 secs.; 2, Coupet, monoplane, 4 mins. 50 secs. For greatest height attained and slowest rate of descent the position was the same, with Bossoutrot first and Coupet second.

LONDON TERMINAL AERODROME

Monday, August 21, 1922.

THE outstanding event of the week is the closing down of their entire goods service by the Instone Air Line. From today onwards they are concentrating on passengers to the exclusion of goods. Their new goods' office on the aerodrome, which was only built at the beginning of this season, is now being demolished together with their original office at the back of it, and which has, for the past year, been the pilots' room; and the firm are vacating this plot entirely. The staffs and cars for the collection and distribution of goods in London, Paris and Brussels are being disbanded: in fact, so thoroughly are they closing down the goods' business that they are giving up the air parcels' post.

Major Greer has quickly discovered what has been common knowledge to those studying air transport, and this is that the parcels' service does not pay for the vans used in collecting and delivering the goods between the aerodrome and the towns. In fact, without making the slightest alteration to the existing air services, and with machines carrying less load, there will be an actual saving. The Daimler Airway recognised this from the start, and have refused to carry goods that needed collecting and delivering except under specially favourable circumstances.

All this does not mean that goods will never pay by air. If there were a big bulk of large consignments, then it would be a proposition worth considering, but with the present numerous small parcels, each weighing only a few pounds, which have to be delivered by motor-van to every corner of London, involving the vans in perhaps a journey of 10 to 20 miles to deliver a parcel on which the entire freight is perhaps a couple of shillings, the situation is ridiculous.

Record Week for Passengers

As many as 741 passengers have departed from, or arrived at, the air-station during the week—which is a record figure. The flow of returning holiday traffic has now set in from the continent.

The first of the long-expected Rolls-Fokker monoplanes arrived during the week from Amsterdam, piloted by Mr. Hofstra. The passenger-cabin is rather larger than in the Puma-engined machine, and has seating accommodation for six passengers. Wicker seats are provided instead of the elaborately upholstered heavy seats in the original Fokkers. A large goods compartment is provided at the back of, and separate from, the cabin. The pilot sits on the opposite side of the engine to his position in the Puma-Fokker, and conforms in this respect to the suggestions made at the meetings of pilots for prevention of collisions in the air, enabling the pilot to keep to the right of the airway, and have a clear view of landmarks and approaching machines.

Both goods and passengers on the K.L.M. are on the increase. The goods traffic by this line has the advantage of being chiefly large parcels which allow of economy in road transport, while, although there is such a volume of goods, the prices charged are as much as four times those charged on the London-Paris service.

I hear that the Messageries Aériennes are to take over the plot vacated by the Instone Air Line and erect offices on it. They have been attempting for some time to get an office on the aerodrome "Broadway" as their present office is hidden away and somewhat difficult to find.

Jockey's Use of Aeroplane "Taxis"

STEVE DONOGHUE, the jockey, has been using the various "air taxis" of the Surrey Flying Services, and the De Havilland Hire Service, to be "in two places at once" during the week. On Wednesday afternoon Capt. Muir, in one of the Surrey Flying Services' Avros, flew to Leicester, alighting actually on the race-course, and fetched Donoghue to Croydon. Here he embarked on a D.H.16 which had just arrived from Ostend with four passengers and was returning empty to Lympne. At Lympne a D.H.9 used on the De Havilland newspaper service from Lympne to Ostend took him to Deauville, returning early the next morning in time for the newspaper service. On Thursday night Capt. Muir left for St. Inglevert, and, after remaining there the night, flew on to Deauville and, picking up Donoghue, brought him back to Hurst Park on Friday morning. Donoghue was again attempting to fly to Deauville and back in the early hours of Saturday to ride in trial there and still be back in time to ride at Hurst Park in the afternoon. There was, however, no machine available, but, as he had to ride at Deauville once again on Sunday, he left Croydon on a De Havilland 9 at 5.30 p.m. for that place.

The Surrey Flying Services met with misfortune during the week. Capt. Muir was flying their Renault-Avro with two passengers who wished to go by air to Ostend. Just after he had left the ground, however, his engine failed, and he was compelled to land in the cornfield on the side of the aerodrome. He alighted all right, but, owing to the fact that he was landing down-wind, and therefore moving rather fast, the corn checked the machine too rapidly, and it went over on its nose. The passengers were not in the least dismayed, and embarked again on a Clerget-Avro and completed their journey "O.K." As a result of this accident, however, the Surrey Flying Services had only one machine available for joy-rides this week-end, which, of course, would be, under such circumstances, fine.

Air Traffic Control from the Tower

At last the various aerodrome controls are getting in their proper place—that is, in the control-tower. The man who waves the red flag which gives pilots permission to take off is now situated on the balcony of the tower, while there is a wireless operator in the tower itself. A field-telephone connects the tower with the duty office, and a wonderful Heath Robinson message-hoist has been constructed, apparently out of bits of old wire, a mustard-tin and a couple of old pulleys, to convey weather-reports up to the wireless operator without the fatigue of climbing up the tower steps each time.

The arrangements for saving road transport made by the Instone Company are working quite smoothly. They time their services to and from Paris and Brussels to leave and arrive at Croydon together, with the result that, in many cases, only one car is needed for both services. At present their machines leave for both Paris and Brussels at 10.30 a.m. and 4 p.m.

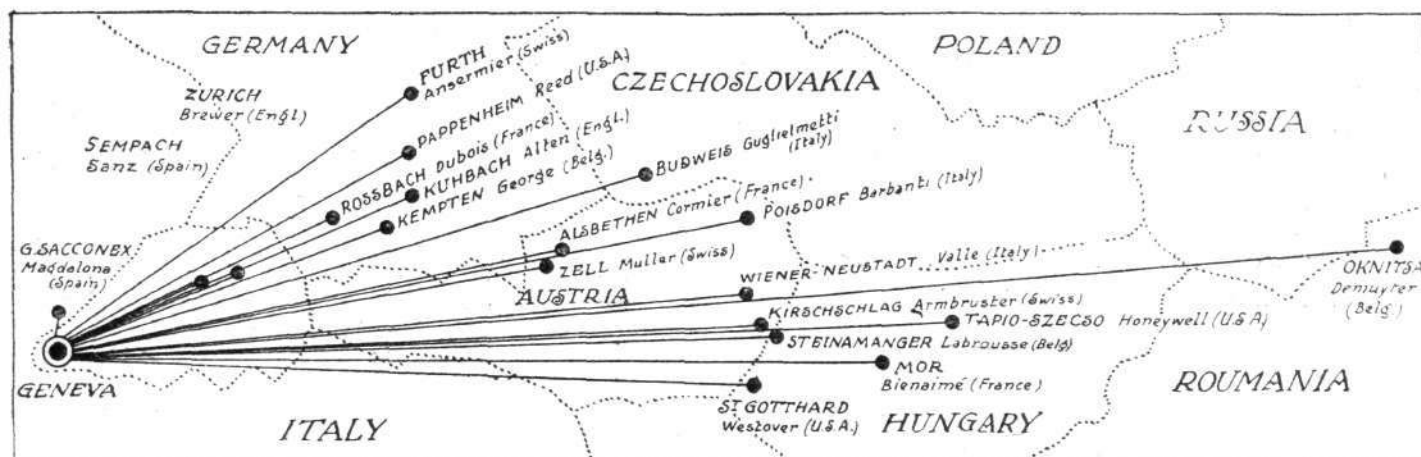
On Sunday two special newspaper photographers went over to Paris to obtain photographs of the Olympic sports there, and the Daimler Airway obligingly arranged that a special machine which was running to cope with the rush of passengers from the other side should not leave until 5.30 p.m., to give them an opportunity of getting back to London with a full set of pictures.

GORDON-BENNETT BALLOON RACE

Demuyter Declared the Winner

AFTER a good deal of controversy, owing to the fact that he alighted from his balloon, which then ascended again, the Belgian aeronaut Demuyter has been declared the winner of the Gordon-Bennett Balloon Race, which started from Geneva on August 6. It was at first thought that Demuyter had been disqualified through his balloon escaping, but the

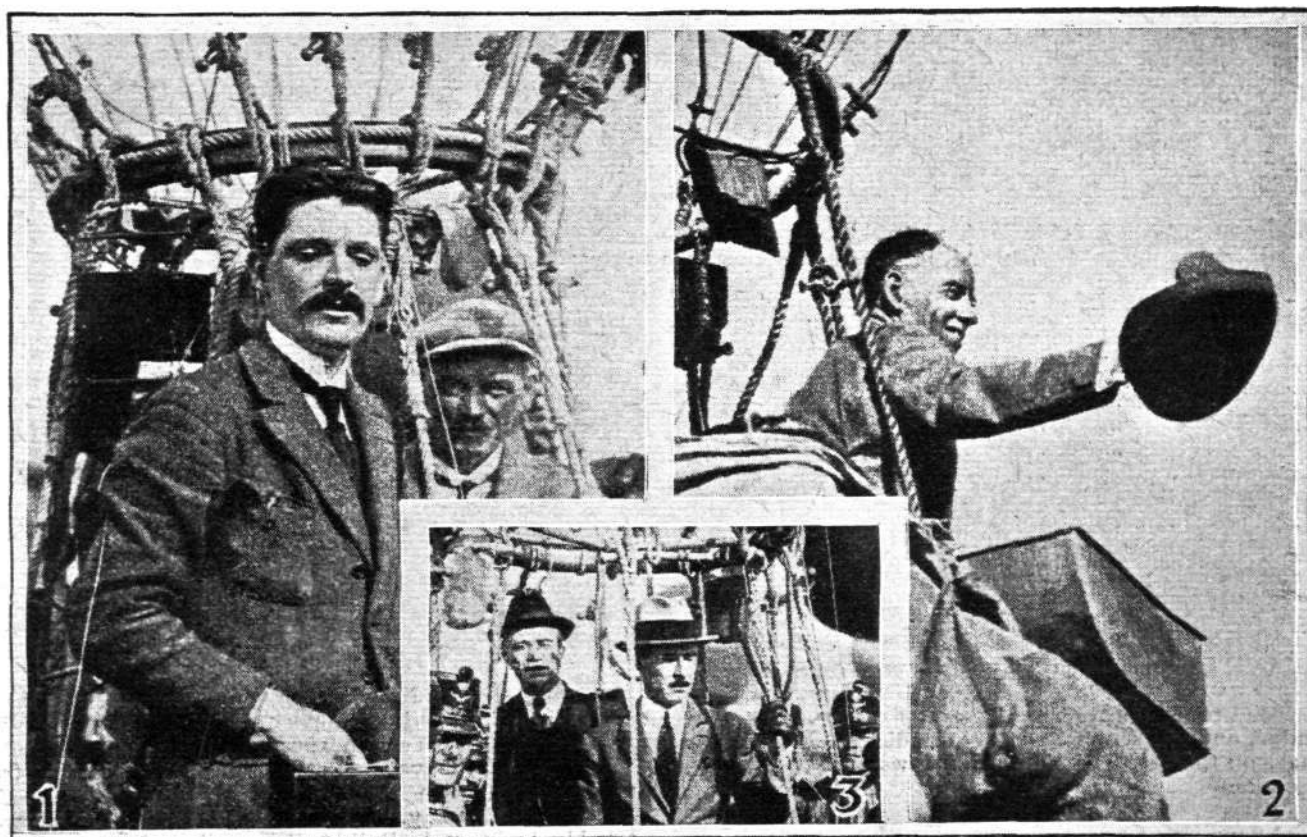
The Gordon-Bennett race was not devoid of excitement, some of the competitors being fired at by local militia, evidently taking the balloons for hostile aircraft. Others had their guide rope cut and lost their balloon, while they themselves were hauled to the nearest police-station, where it took several hours to convince the authorities of their innocence.



THE GORDON-BENNETT BALLOON RACE : Sketch map of the landing places. The words in capitals are the names of the towns where alightings were made. Following them are the names of the pilots, and, in brackets, the nationalities.

instruments and log-book of the balloon have now been examined, and the distance covered, reckoned to the point of alighting, has been accepted. This is approximately 870 miles from Geneva. Second appears to be the American Honeywell, and third Bienaimé.

The routes followed by the various competitors are shown in the accompanying map, as are also the points where they alighted. In the photograph, for which we are indebted to *Le Miroir des Sports*, are seen the aeronauts winning first, second and third places in the race.



FIRST, SECOND AND THIRD IN THE GORDON-BENNETT BALLOON RACE : 1, Demuyter at the start of his balloon, Belgica. He covered a distance of approximately 870 miles. 2, The American representative, Honeywell, whose distance was 660 miles. 3, The French aeronaut Bienaimé, who covered a distance of 575 miles.

AIR MAIL SERVICES TO INDIA

In our issue of last week we published a review of the first report of the Civil Aviation Advisory Board on the practicability of Air mail services to India. Three main routes were, it will be remembered, considered by the C.A.A.B., of which one, the seaplane route from Southampton *via* Cherbourg, Bordeaux, Sardinia, Malta and Crete to Alexandria, was considered too long (2,650 miles) for practical comparison with the other routes suggested.

In order to assist in forming a mental picture of the various routes and stages involved, we have prepared a sketch map of the routes considered, from which the countries traversed and the landing-places suggested may be readily located.

Taking first the overland route *via* Constantinople, the landing grounds and length of stages are as follows:—

London—	Miles.
Brussels	200
Frankfort	200
Nuremburg	110
Vienna	270
Budapest	150
Bucharest	390
Constantinople	280
	<hr/> 1,600

(ii) Brindisi—	Miles.
Patras Harbour, Greece	270
Suda Bay, Crete	260
Alexandria	480
	<hr/> 1,010

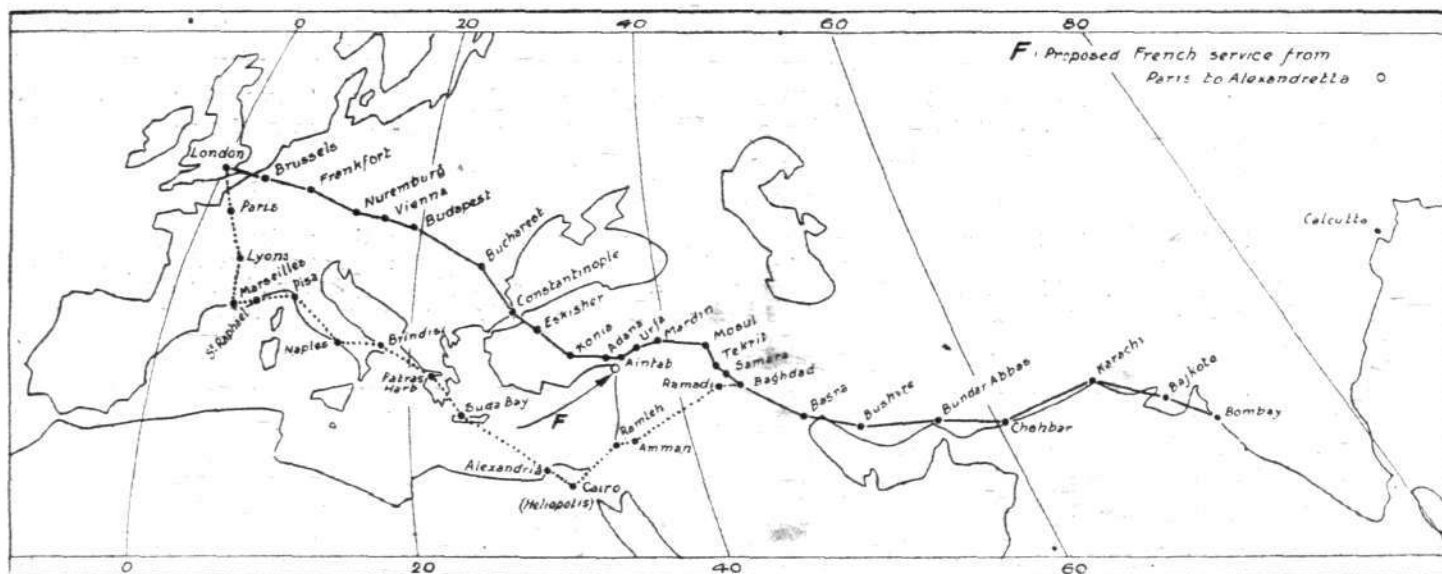
This route gives a total mileage from London to Alexandria of 2,365 miles.

From Egypt onwards the R.A.F. route from Cairo to Baghdad would be used. This is as follows, the intermediate landing-grounds being inset—

Cairo (Heliopolis)—	Miles.
Ramleh	240
Amman	63
Ramadi	467
Baghdad	63
	<hr/> 833

The mails would be picked up, not at Cairo, but at Port Said or Alexandria.

A third route, *via* Alexandretta (Iskanderun) in Syria, will, the report states, come into prominence if the French proposed route from Paris *via* Italy and Greece to Alexandria



AIR MAIL SERVICES TO INDIA : Sketch map of the various routes considered by the Civil Aviation Advisory Board, a review of whose first report was published last week.

Constantinople—	Miles.
Eskisher	125
Konia	170
Adana	170
Aintab	120
Urfa	85
Mardin	105
Mosul	150
Tekrit	125
Samara	30
Baghdad	65
	<hr/> 1,145

In above table inset names indicate intermediate landing-grounds, which would not necessarily be used on every trip, but are more in the nature of emergency landing-grounds.

The second route considered is by aeroplane from London to Brindisi, and by seaplane from Brindisi to Alexandria. The stages on this route would be as follows:—

(i) London—	Miles.
Paris	200
Lyons	245
Marseilles	170
St. Raphael	70
Pisa	185
Naples	285
Brindisi	200
	<hr/> 1,355

matures: the British route from there would link up with the route outlined above, either at Adana or Aintab.

Whichever route is followed, the Baghdad to Karachi section is a necessary link in the chain. One route suggested is along the Persian side of the Persian Gulf. This would probably be as follows:—

Baghdad—	Miles.
Basra	290
Bushire	230
Bunder Abbas	400
Chahbar	330
Karachi	400
	<hr/> 1,650

An alternative route would be along the Arabian shore of the Persian Gulf, but the report states that this is unlikely to be opened for service purposes in the near future.

The C.A.A.B. have assumed provisionally that a feeder line, operated with seaplanes, must be established from Karachi to Bombay. The stages for this section would probably be Karachi-Rajkote (290 miles), Rajkote-Bombay (260 miles); total, 550 miles.

It will be seen that the London-Constantinople-Baghdad route is the shortest of those considered, but the report points out that, until conditions in Turkey in Asia have settled down there are difficulties, apart from physical ones, to be overcome and that whether or not this route is practicable remains to be determined.

THE RACE FOR THE KING'S CUP

List of Turning-Points

COMMANDER H. B. PERRIN, Secretary of the Royal Aero Club, has been touring the north, making arrangements for the turning points in the race for the King's Cup, which will start from Waddon aerodrome on Friday, September 8th. In spite of many difficulties, especially at Newcastle, the arrangements have now been completed, and we are able to announce that the route will be as follows:—

Waddon (start).
Birmingham (Castle Bromwich).
Newcastle (Town Moor).
Glasgow (Renfrew).
Manchester (Alexandra Park).
Bristol (Filton).
Waddon (finish).

There will be compulsory stops of one hour at each turning point, and Friday night will be spent at Renfrew. Further details will be announced shortly.

In the meantime entries are, we understand, beginning to come in, and it is expected that quite a good "field" will assemble at Waddon on September 8.

The very handsome Cup presented by His Majesty the King has been on view in the Air Ministry window in the Aldwych during the last week or so, and has attracted very great attention from passers-by. The Cup, which has been made by Mappin and Webb, weighs over 200 ozs., is about 20 ins. in height and carries the following inscription: "Royal Aero Club Circuit of Britain Race, 1922. Cup presented by King George V."

As will be seen from the accompanying photographs, the Cup is an extremely beautiful one, and His Majesty's gracious act in presenting it will be greatly appreciated, not only by those directly interested in aviation, but by all who realise the importance to our air power of sporting aviation. It now rests with us (the aviation community) to see to it that the list of entries is a thoroughly representative one, and worthy of the honour which His Majesty has so generously bestowed.

The closing date for entries is August 28, and there will be no late entries, against special late fees, after that date.



Two views of the Cup presented by H.M. the King for the Circuit of Britain, which will start from Waddon Aerodrome on Friday, September 8.

Air Defence of London

THE War Office announces that arrangements are now practically complete for the raising of the Royal Artillery and Royal Engineers Anti-Aircraft units and the Signals Company of the two London Air Defence Brigades which are to form part of the Territorial Army, and to be known provisionally as the 2nd and 3rd London Air Defence Brigades. Recruiting will be opened shortly. Meantime, those who wish to serve in the new formations should make application in writing to the Headquarters, Air Defence Brigades, 145, Sloane Street, W.

Each of the Air Defence Brigades will consist of a Headquarters, two Anti-Aircraft Brigades, R.A., and Anti-Aircraft Battalion, R.E., and an Anti-Aircraft Signal Company. The Air Defence Brigades will be administered by the County of London Territorial Army Association, except in the case of the two Anti-Aircraft Brigades, R.A., of the 3rd Defence Brigade, which will be administered by the City of London Territorial Army Association.

Air-Commodore Higgins and Air-Commodore Charlton

THE transfer of Air-Commodore T. C. R. Higgins, C.M.G., from No. 7 Group Headquarters (Inland Area) to the Air Ministry, on appointment as Director of Training and Staff Duties, was officially announced on August 18 to date September 1. Air-Commodore L. E. O. Charlton, C.B., C.M.G., D.S.O., is appointed to command No. 7 Group Headquarters.

A Swedish Duration Record

ON July 23 the Swedish pilot Lieut. Ljungdahl established a new Swedish duration record by flying from 6.32 a.m. to 8.42 p.m., a period of 14 hrs. 10 mins. He is estimated to have covered during that period a distance of approximately 1,000 miles.

A Seaplane Flight Around Norway

Two Norwegian aviators, Lieuts. Riiser-Larsen and Lützow-Holm, on July 14 completed a flight around the coast of Norway. Starting from Horten, in the Christiania Fiord, at 6 a.m. on July 12, each on a Hansa-Brandenburg monoplane, they flew down the fiord, around by Christiansand and up the west coast. Kirkenes, on the boundary between Norway and Finland, was reached at 4.30 a.m. on July 14, a distance of approximately 2,250 miles having been covered in under 48 hours.

Paris-Mainz in 2 hrs. 18 mins.

FROM Paris is reported a flight on August 18 by six aeroplanes of the 34th Regiment of the French Air Force, under the command of Lieut. Bastide, from Paris to Mainz, a distance of 342 miles, in 2 hrs. 18 mins. Leaving Le Bourget at 5.45 a.m., the planes landed at Mainz at 8.3.

Brussels Air Mail

THE Postmaster-General announces that the air parcel-post service from London to Brussels is suspended as from August 21.

THE HANRIOT TWO-SEATER FIGHTER, TYPE H.15

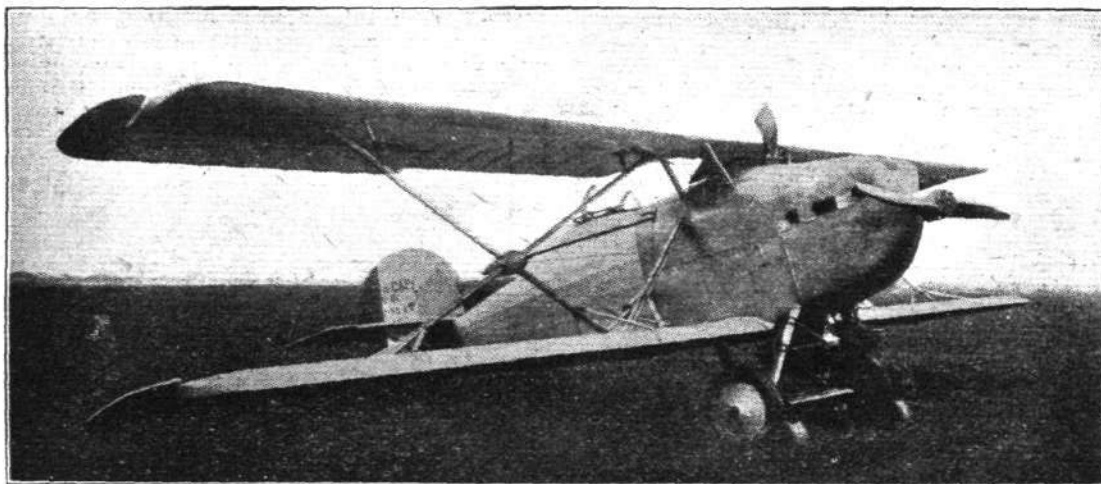
An Interesting French All-Metal Machine

At the last Paris Aero Show there was exhibited on the Hanriot stand a very business-like racing monoplane, with cantilever wings, remarkable for its aerodynamic cleanness of design no less than on account of its all-metal construction. Certain of its details were not, perhaps, all that they might have been, but, generally speaking, the machine, which had been designed for last year's Coupe Deutsch, was one of very considerable interest. The racer was not finished in time to take part in the race, and we have not up to the present heard of it being tested in flight. However that

unusual wing bracing, while some of the wing details are shown in the sketches. The fuselage construction consists of tubular longerons with triangular bracing, also of tubular construction. The front portion of the fuselage is covered with aluminium, but fabric is used from the pilot's cockpit to the stern post.

Wing Construction

Apart from the fact that it is fitted with a supercharger, the Hanriot 15 is chiefly interesting on account of the all-metal wing design, the fuselage construction showing fewer

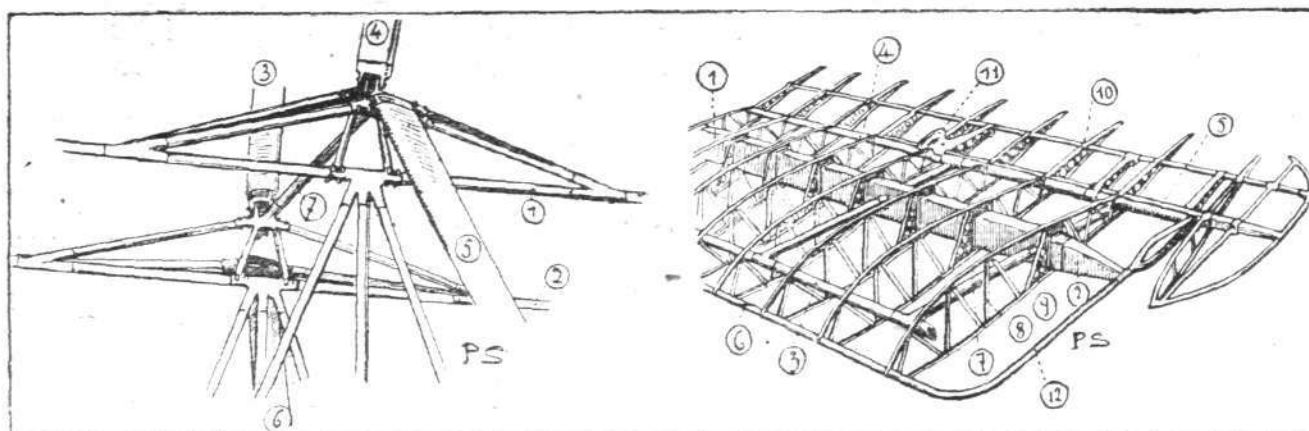


The New Hanriot All-Metal Two-Seater Fighter.

may be, the Hanriot Works are carrying on with all-metal construction, and one of the latest to issue from the works for flying tests is the type H.15, for the illustrations and characteristics of which we are indebted to our excellent French contemporary *L'Aéronautique*.

Designed for the *Section Technique*, the Hanriot 15 is an all-metal two-seater fighter of unorthodox design. The power plant is a 300 h.p. Hispano-Suiza, and a Rateau supercharger is fitted, as the machine is intended to operate at great altitudes. As to how far the estimated performance will be realised, no information is as yet available. In the meantime, it is of interest to note that the calculated

points of interest. From the accompanying sketches, it will be seen that each wing has one main spar only, but that this single spar is reinforced against torsion by two tubular auxiliary spars. The latter do not appear to be intended to take any part of the bending stresses. The main spar is of Duralumin, apparently of box section, terminating at the tip in a wooden end piece so as to avoid shaping the Duralumin box. The wing section is deep, so as to allow of a good spar depth, but apparently the wing does not taper either in chord or thickness. The auxiliary spars are in the form of Duralumin tubes, and bolted to them, and passing through the main spar, are the tubular compression struts of the internal drag



THE HANRIOT TYPE H. 15 : Some constructional details. In the drawing on the left, 1 and 2 are the top longerons of the fuselage ; 3 and 4, centre-section struts ; 5 and 6, sloping struts to lower plane ; 7, horizontal strut in top of fuselage. In the right-hand sketch, 1 is the Duralumin box spar ; 2, wooden end piece of spar ; 3, front auxiliary spar ; 4, rear auxiliary spar ; 5, aileron spar ; 6, tubular leading edge ; 7, rib flange (tubular) ; 8, rib trellis ; 9, gusset plate, securing ribs to spar ; 10, aileron rib ; 11, aileron crank ; 12, tubular wing tip.

speed at the height at which the H.15 is intended to operate (23,000 ft.) is 143 m.p.h. The theoretical ceiling (on the assumption that the supercharger works perfectly) is 33,600 ft., and it is estimated that the climb to 23,000 ft. will be accomplished in 25 minutes. It will thus be seen that, assuming the estimated performance to be attained, the Hanriot 15 should be a very useful machine for military purposes.

As regards general design and detail construction, the former is shown by the accompanying photograph to be a considerable departure from orthodox lines, with its very

bracing. The ribs are built up of Duralumin tubing, this material being used both for flanges and triangulated webs, as shown in the sketch.

The wing bracing is unusual in that the single struts are arranged to act as lift and anti-lift members at the same time. From a short distance out on the lower plane a strut runs to the top longeron of the fuselage, while another strut slopes outward and upward to the top plane. The outer end of the lower plane is supported by a sloping strut running to the top centre section, crossing the lift strut en route. To reduce the bending moment on the fairly long bay in

the top plane a wire is taken from the point where the main struts cross each other to the top spar, while from the same point on the struts an external drag wire runs to the nose of the fuselage.

The incidence of the outer portion of the wings is adjusted by means of the members running from the auxiliary spars to the main struts, but, owing to the obliquity of these struts, it might be imagined that considerable stress would be put on the spars and ribs with travel of the centre of pressure.

Contrasted with the tendency in British design towards a duplication of parts and relatively small factors of safety on each, the Hanriot wing bracing is interesting as an example

of the opposite method: as few parts as possible, and these of necessity highly stressed. It would appear that a lucky shot in one of the main inter-plane struts might seriously endanger the strength of the wing structure, as might also a shot in one of the single main spars.

The main characteristics of the Hanriot 15 are as follows: Length o.a., 25 ft. 7 ins. Span, 35 ft. Wing area, 300 sq. ft. Height, 9 ft. 10 ins. Gap, 5 ft. 3 ins. Weight, empty, 2,300 lbs. Weight of fuel, 660 lbs. Useful load, 880 lbs. Total loaded weight, 3,840 lbs. Wing loading, 12.8 lbs./sq. ft. Power loading, 12.8 lbs./h.p. Speed at 23,000 ft. (estimated), 143 m.p.h. Climb to 23,000 ft. in 25 mins. Theoretical ceiling, 33,600 ft.

THE COUPE DEUTSCH

Only One British Representative

THE entries list for the Coupe Deutsch race, which is to be flown over the Villesauvage-la Marmogne course, near Etampes, on September 30, has now been closed, and we regret that only one British machine, the "Mars I" of the Gloucestershire Aircraft Co., has been entered. The race is undoubtedly the most important international speed race in Europe, and it had been hoped that the Bristol monoplane racer with Bristol "Jupiter" engine would be entered. This, it now appears, has not been found possible, owing to the difficulties of getting such a fast machine tuned up in time, and the task of representing Great Britain will thus rest entirely with Mr. J. H. James. That he will be matched against some formidable "projectiles" goes without saying, but the "Mars I" has been considerably cleaned up of late, and James should be in a position to put up a creditable fight for the Coupe Deutsch. Italy has entered one machine, the Fiat, flown by Brack Papa. This machine has a 700 h.p. Fiat engine, and will thus easily be the most powerful in the race.

France has entered no less than six machines, and as each country is only allowed to enter three machines in the race, eliminating trials will have to be held. The six French machines, pilots and engines are: Jean Casale (type Casale), Blériot with 400 h.p. Lorraine engine; Nieuport-Delage biplane, 320 h.p. Hispano-Suiza, to be flown by Lasne or Berthelin; two Nieuport-Delage "Sesquiplans," 320 h.p. Hispano-Suiza engines, to be flown by Lasne and Sadi Lecointe; Madon "Simplex" monoplane, 320 h.p. Hispano-Suiza, to be flown by Canivet; and one machine, type and engine not stated, to be flown by Nungesser.

The Nieuport-Delage biplane is the old type which is already well known. The "Sesquiplans" will probably be

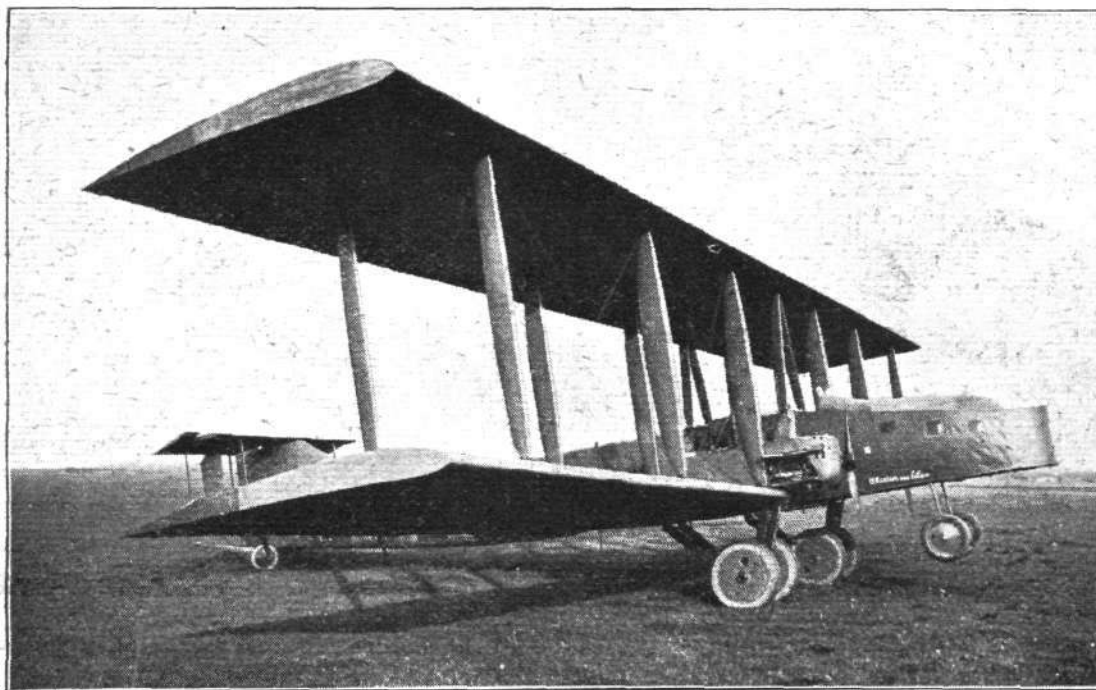
similar to that with which Kirsch won the Coupe last year, but with minor modifications. The Blériot, type Casale, is an unknown quantity, but we believe that, as a matter of fact, it is a Spad-Herbemont, fitted with the Bristol "Jupiter" engine which recently passed the French Air Ministry Type Tests.

The Madon monoplane, type "Simplex," is evidently an outcome of the experiments which M. Canivet has been carrying out for M. Madon on tailless machines. The machine on which the experiments were made was a small biplane with rotary engine, the longitudinal stability apparently being derived from back-swept wings, after the fashion of the Dunne. How this system makes for extra speed is a little difficult to see; the Dunne certainly was not wildly fast. On the other hand, the suppression of the tail should result in a certain saving in resistance, but it might be expected that this advantage would be nullified by the alterations necessary to the wings.

The machine entered by Nungesser is quite an unknown quantity, but no doubt something will be heard of it in the eliminating trials.

The 700 h.p. Fiat is probably the same machine as that flown by Brack Papa last year, possibly with minor alterations by way of cleaning up.

Altogether it looks as if James is going to have his work cut out, but Mr. Folland has not been entirely idle of late, and may be expected to have something up his sleeve. The Aerial Derby gave no indication of the speed of which the "Bamel" was really capable, much less of what it can do when in trim for an event like the Coupe Deutsch.



THE FARMAN FOUR-ENGINE NIGHT BOMBER: At the last Paris Aero Show one of the machines exhibited on the Farman stand was a large four-engine night bomber, the B.N.4, with four Lorraine-Dietrich engines of 400 h.p. each. This machine has now been flown, M. Bossoutrot taking it into the air on August 1, before the "Section Technique." The B.N.4 weighs, with full load, about ten tons, and carries fuel for a flight of seven hours' duration. In addition it is armed with machine guns for repulsing attack, and carries a long-range wireless outfit, so as to be always in communication with its base.

THE GOODYEAR "AC" NON-RIGID DIRIGIBLE

SOME successful trials were carried out recently at the Akron (Ohio) Air Station of the Goodyear Tyre and Rubber Co. with a new type of non-rigid dirigible, designed and constructed by this firm for the U.S. Army Service. The outstanding features of this dirigible, which is of medium size, consist of the unit-type power plant and propeller transmission, the location of the car flush with the envelope, and the somewhat squat shape of the latter.

The results obtained from the trials have indicated that these features—which are more or less of an experimental nature—will prove satisfactory and probably mark a considerable improvement in airship design. Not only has the squat shape of the envelope—the aspect ratio being 3.6 to 1—proved to be remarkably efficient and stable, but it has permitted a concentration of lift, and enabled a considerable saving to be effected in the weight of car suspensions. With a length and diameter respectively of 170 ft. and 48 ft., the volume of the envelope is 185,000 cu. ft.

The car is of the enclosed type, with two longitudinal sills, 18 ins. deep, which constitute the backbone, or main framework of the structure. The remainder of the car is practically a shell housing the crew, etc., and in this way the weight of the car comes out at about the same as that of an ordinary open car. It is divided by a soundproof bulkhead into two compartments, one forward forming the control and navigating cabin, and one aft forming the engine room.

In the forward portion of the pilot's cabin is a neat control board, which carries practically every instrument that is

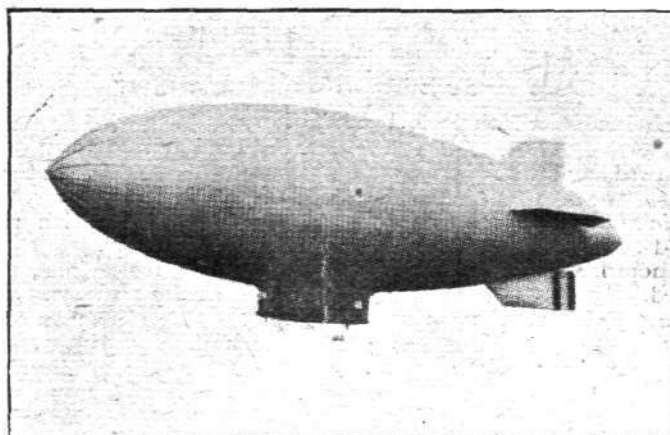
car, and driving two airscrews, one on each side of the car, through a spiral bevel transmission and enclosed propeller shafts which extend out from the sides of the car. The shafts, together with reverse gear, etc., lie between the engines, and the whole power plant forms one complete unit. It is possible for both engines to drive one propeller, or for one engine to drive both propellers. The propellers are of large diameter (11 ft. by 10 ft. 6 ins. pitch), and run at about 800 r.p.m. (1,600 r.p.m. engine speed).

The detail design and production of the transmission were accomplished by Mr. J. Ruse, chief engineer of the Wellman-Seaver-Morgan Co.

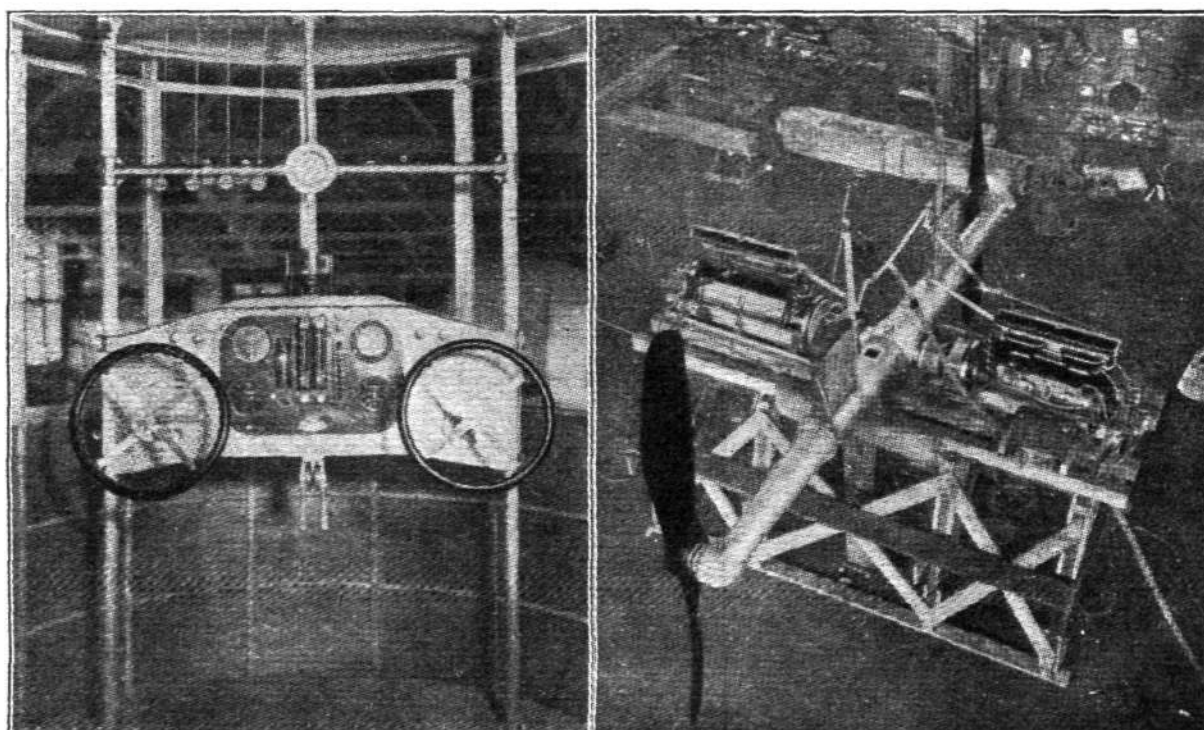
The fuel tanks are located in the rear part of the navigating cabin, in two 160-gall. tanks so constructed as to permit them to be used as sleeping bunks. All check valves, fuel lines, and miscellaneous fittings are beneath the floor, out of the engine room. Below the floor line and extending the full length of the car, is a duct, 32 ft. long and 20 ins. wide, which is so ventilated as to get a constant flow of fresh air at all times. It is of interest to note that the walls of the engine room are lined with sheet asbestos. The mufflers are of the dual type, in which a part of the air which is

delivered to the ballonet is circulated around the exhaust chamber and then into the exhaust itself, to assist in silencing the exhaust. The air for the ballonet is supplied by Sirocco type fans, bolted directly to the engine flywheels.

Water ballast is carried in the floor of the car immediately below the navigating cabin, wherein a dial is located to indicate the amount of water available for ballast.



THE GOODYEAR "AC" NON-RIGID DIRIGIBLE:
The Ship in Flight.



The Goodyear "AC" Non-rigid Dirigible: On the left, the control in the fore-cabin. On the right, the power plant.

required for successful airship navigation. The pilot controls the entire transmission, clutches, reverse, etc., from the cabin. An instrument board is also provided in the engine room whereby the engineer may read all pressures and temperatures, etc., of the engines and transmission assembly.

The power plant consists of two 130 h.p. Aeromarine, U6D engines placed end to end in the rear compartment of the

Between the envelope and the car proper there is an air space of 14 ins. clearance, this being faired into the envelope by elastic fabric, with openings at the forward part of the ship to insure constant circulation between the envelope and the roof of the car. The possibility of hydrogen gas getting into the control or engine compartments is thus eliminated. It should be noted that the top of the car is made gas-tight,

further to guard against this danger, whilst the single ballonnet—which constitutes 30 per cent. of the ship's volume—is directly above the car, thereby securing another layer of air between the bottom of the envelope and the gas.

All suspension cables run to the floor of the car, thus permitting veneer sides of $\frac{3}{32}$ -in. thickness to be used. As all loads are concentrated at the floor line, the surge of the car while in flight is resisted by two lateral cables and four longitudinal cables attached to the centre bulkhead. This, in addition to martingales, which are also attached to the floor line, have proved to be very successful in overcoming the fore and aft surging usually experienced when a car is hung too far away from the envelope. The disposable load being located directly under the centre of volume of the ballonnet, permits the employment of a single ballonnet without any

possibility of the ship getting out of trim, irrespective of the loads carried within the car.

The principal characteristics of the Goodyear A.C. Airship are:—

Volume	185,000 cu. ft.
Length	170 ft.
Diameter	48 ft.
Speed	65 m.p.h.
Ceiling	12,000 ft.
Rate of climb	1,000 ft. per min.
Rate of descent	800 ft. per min.
Radius of action (full speed)	20 hrs.
Radius of action (cruising speed)	30-40 hrs.
Percentage of useful load	39
Crew	7

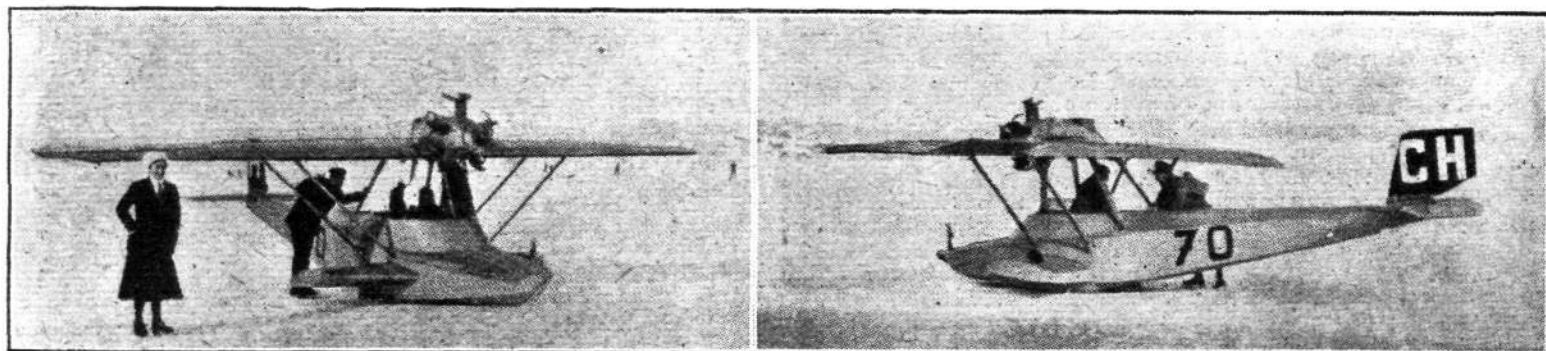
THE DORNIER "DRAGON-FLY" FLYING BOAT LANDING ON THE ICE

In our issue of October 20 last we gave a description and general arrangement drawings of the Dornier all-metal "Dragon-fly" flying boat, fitted with a 60 h.p. Siemens-Halske engine, and this week we supplement the aforesaid particulars with the accompanying illustrations, showing one of these handy little machines on the ice at Lake Constance. These views were taken on the occasion of some interesting and successful experiments carried out, on the Swiss side of the Lake, with the object of demonstrating the capabilities of the machine in landing on, and taking off from, the ice.

There are occasions, in certain countries, where such a performance would be of considerable value on commercial air routes, especially in such localities where the formation of ice hinders or prevents steamship communication. Successful experiments have been made in the past with aeroplanes fitted with ski-landing gear, but while landings on, and take offs from, snow or ice were accomplished, the machine was unable to alight on or take off from anything else—land or

water. It is obvious that this is an important point where a particular air route presents both conditions, and it was this dual operation the Dornier flying boat demonstrated some time ago.

On this occasion a start was made from the water about 25 miles from the spot (Lower Lake) where the landing on ice was to take place. The load was 450 lbs., and consisted of pilot, passenger, and a full load of petrol. After flying for about 18 mins., the machine arrived above the completely frozen Lower Lake, and made a successful landing on the lightly snow-covered ice surface. Following several "skating" tests over the surface, with the object of determining the possibility of steering, etc., a start was made from the ice. Owing to the very low resistance offered by the ice, it took only some 12 to 14 secs. to take off. Several more starts and landings were made, alternating on snow-covered ice and on polished ice. Tests were also made with the wind abeam and from the stern. All tests proved satisfactory, and the flying boat was not in any way damaged or strained.



The Dornier "Dragon-fly" Flying Boat, with which experiments were carried out some time ago on Lake Constance (Switzerland), in alighting on and taking off from the ice.

"Daily Mail" Prize for Gliders

Just as we are going to press the announcement is made that the *Daily Mail* is offering a prize of £1,000, open to aviators of any nationality, for the longest flight made on an engineless glider in England (presumably this means Great Britain) during September. The prize will be won by the competitor who, rising from a specified area, remains longest in the air, provided the flight occupies not less than 30 minutes. A larger prize for next year is also announced. For particulars apply to the Secretary of the Royal Aero Club, 3, Clifford Street, New Bond Street, London, W. 1.

Seaplanes for Sweden

FROM Stockholm it is reported that the Swedish aircraft firm Svenska Aero Aktiebolaget has just delivered to the Swedish Navy a seaplane which is to be the first of a series of 10 machines ordered. The new seaplane has been designed, it is understood, by Herr Ingeniör Heinkel, now Technical Director of the German Caspar works. The machine is very similar in general design to the Hansa-Brandenburg monoplanes of the War period, but the detail construction is said to be a considerable improvement. The engine fitted at present is a Maybach, but there is talk of fitting Siddeley

Pumas instead, which it is expected will considerably improve the performance. The length of the new seaplane is 41 ft. 6 ins. and the span 57 ft. 5 ins. The wing area is 565 sq. ft., and the weight empty 3,300 lbs. With a useful load of 1,430 lbs. the machine has a speed of 100 to 105 m.p.h., and climbs to 3,000 ft. in 7 minutes. On one occasion the useful load was increased to 1,870 lbs., with which the machine got off without great difficulty.

London-Lausanne by Air

MESSRS. THOMAS COOK AND SONS now issue through tickets from London to Lausanne and Geneva by Daimler air-express, leaving London Air Station at 5.30 a.m. on Saturdays. By this service passengers will arrive in Paris in time for breakfast, before leaving for Switzerland on a French air-express at 9 a.m. Lausanne is reached at 12.30 p.m. and Geneva an hour later.

A return flight will be made each Monday from Geneva at 8 a.m., London being reached in the afternoon. The through fare for the one-day journey is 675 fs.

An extension of this service is shortly to be opened between Lausanne, Evian-les-Bains and Aix-les-Bains.

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

THE R.A.F. AND THE NAVY

[2060] I have read with much interest the recent correspondence in regard to the Air Service, and as an old pilot and a great believer in the future of the air, I venture to give my views:—

The advocates seem to be divided into two main classes:—

Class 1.—Those who wish to increase the Air Force at the expense of our One-Power Naval Standard.

Class 2.—Those who wish to increase the Air Force and at the same time keep up our One-Power Naval Standard.

The advocates of Class 1 have certainly a strong argument from the point of view of economy, but there would appear to be very serious objections from other points of view. Some of these are as follows:—

1. It does not yet appear to have been proved that the aeroplane has at present definitely made the battleship useless. In my opinion (given for what it is worth), it will not be proved until the next war. After all, the "dazzling constellations of political talent," mentioned in the *Daily Mail* appear to be supported by Lord Beatty, whose opinions are worth at least as much as those of the "Anti-Battleship" party.

2. Granted that the above is a reasonable argument, it logically follows that not to build the two battleships that are at present being discussed (and so maintain our One-Power Standard) would be stepping off one rung of the ladder before getting a secure grip of the next.

3. Enough notice does not appear to have been taken of the serious loss of prestige that would ensue if we abandoned our One-Power Naval Standard. This would inevitably react against us politically and commercially, for it is as true today as ever that "Trade follows the Flag." This is a loss that cannot easily be defined or measured, but it is none the less real.

4. I am strongly of the opinion that our civil expenditure should be pruned before our security.

5. A lot has been said about the little our battleships did in the Great War, but not so much as to what would have happened if we had not happened to have them.

To turn to the second class and its subdivisions, I would submit that the best solution is a combination of (not a "compromise between") *a* and *b*, more or less as follows:—

1. The Navy and Army should have complete control of their own aircraft and personnel for the purposes of reconnaissance and artillery co-operation only.

2. The Royal Air Force should remain a separate entity, which would undertake:—

(a) Responsibility for protection of reconnaissance and artillery machines as requested by the Army and Navy. (This would to some small extent resemble the arrangement under which the Navy guaranteed the transport of the B.E.F.)

(b) Offensive action against enemy aircraft and prevention of enemy aircraft activity over our lines, fleet and shores.

(c) Strategical offensive work (*i.e.*, long-range bombing, etc.).

(d) Tactical bombing and "trench-strafting," etc., in battles in accordance with the plans and under the command of the naval or military officer in charge of the operations (*i.e.*, in, say, a land battle, the R.A.F. co-operating would be instructed that certain points were to be destroyed by bombs, or troops in certain positions were to be attacked, etc.).

My arguments in favour of a system on the above lines are:—

1. Unless reconnaissance, contact and artillery co-operation pilots and observers are trained with and by the arms of the Service they are to work with, there is bound to be a loss of efficiency due to their lack of knowledge of those services. A correspondent to the *Morning Post* states that if a naval officer is to become efficient as a co-operation pilot, he must be 95 per cent. an aviator, and remain not more than 5 per cent. a naval officer. I think this is not correct when applied only to naval reconnaissance and spotting, as it would be far more advantageous to remain chiefly the naval officer. Similar arguments apply to the Army.

2. On the other hand, unless a separate Air Force is retained for air offensive work generally, the full development of aircraft in war will undoubtedly be hampered. There are bound to be important strategical and tactical advances in the use of aircraft and in air fighting which need scope for their development unhampered by the other Services. There is also the main point that, even if opinions are divided as to whether or not the Air Force is the first line of defence now, it is bound to be so in the future, and the Air Force must be given a free hand to arrive at that stage.

3. A system on the above lines might be a little more costly, and might present difficulties in working out. It would, however, have the inestimable advantage of clearing the atmosphere and of doing away with squabbles. It would also eliminate the troubles of "divided command." Each Service would have its own responsibilities clearly marked out, and could develop along its own lines within the limitations laid down. It would then be directly responsible to the Government, and could not put the blame for failure on either of the others.

To conclude, I would refer to the rather short-sighted outcry against "bricks and mortar" expenditure by the Air Ministry. Generally speaking, it is difficult for one who has not been in the Air Force to realise the amount of ground organisation necessary to keep machines in the air. If, as I believe and hope is the case, the Air Force is being prepared for rapid expansion during war, it is quite sound to carry out the necessary—and it is necessary—"bricks and mortar" expenditure now, whilst war is unlikely in the near future, and to see, as Capt. Guest so aptly put it, that "the foundations are well and truly laid."

I must apologise for the length of this letter, but trust you will find space for it.

PIERRE B. PATTISSON, Jun., Captain.

St. Meddan's House,
Troon, Ayrshire, N.B.

✉ ✉ ✉ ✉



THE COUPE SCHNEIDER: Mr. H. C. Biard, the pilot of the winning Supermarine-Napier flying boat, who arrived back in London from Naples on Tuesday afternoon, at the entrance to the Royal Aero Club to "report." Mr. Biard, who is seen in the centre, was escorted by Mr. Hubert Scott-Paine and Mrs. Scott-Paine, and was received at Victoria Station by Commander J. Bird, Commander Perrin, and a host of friends prior to his calling at the Club. In the photograph with Mr. Biard are, left to right, Mr. Scott-Paine, of the Supermarine Aviation Works; Col. Darby, of the Aircraft Disposal Company; Col. Frank McClean, and Mr. H. T. Vane, C.B.E., Managing Director of Messrs. D. Napier and Son.

THE ROYAL AIR FORCE

London Gazette, August 15, 1922

General Duties Branch

E. V. Culverwell is granted a short service commn. as a Flying Officer, with effect from and with seniority of, August 1.

The following Pilot Officers to be Flying Officers:—N. H. D'Aeth, J. E. L. Drabble, C. W. Weedon, H. L. Beatty, C. G. Hancock, H. G. Brookman, G. R. C. Spencer, H. W. Foote, D. C. Prance, J. G. Peck; June 21. J. S. L. Adams, M. H. Ely, D. H. Geeson, J. de la P. B. Preston, R. L. Ragg, G. H. Smith; July 15.

Wing Commander I. T. Courtney, C.B.E., is seconded for duty with the

British Naval Mission in Greece; August 9. Flying Officer B. Scovell, A.F.C., is placed on the retired list on account of ill-health; August 16.

Stores Branch

E. G. Jolliffe is granted a short service commn. as a Flying Officer on probation, with effect from, and with seniority of, July 25.

Medical Service

J. G. F. Heal, M.D., is granted a short service commn. as a Flight-Lieut., with effect from, and with seniority of, August 1. The following are granted temporary commns. as Flight-Lieuts., with effect from, and with seniority of, August 1:—M. Coghlan, M.B., J. W. H. Steil, M.B.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

Air Commodores.—L. E. O. Charlton, C.B., C.M.G., D.S.O., from R.A.F. Depot (Inland Area) to command No. 7, Group Headquarters (Inland Area). 1.9.22. T. C. R. Higgins, C.M.G., from No. 7 Group Headquarters (Inland Area) to Air Ministry on appointment as Director of Training and Staff Duties. 1.9.22.

Group Captains.—C. L. N. Newall, C.M.G., C.B.E., A.M., from Air Ministry to No. 1 School of Technical Training (Boys), Halton. 24.8.22. A. G. Board, C.M.G., D.S.O., from No. 1 School of Technical Training (Boys), Halton, to Air Ministry, on appointment as Deputy Director of Personnel. 24.8.22. J. Hearson, C.B., D.S.O., from R.A.F. Depot (Inland Area) to Headquarters, R.A.F. (Iraq). 28.7.22. E. F. Briggs, D.S.O., O.B.E., from R.A.F. Depot (Inland Area) to Headquarters, R.A.F. (Iraq) (Supernumerary), to command Basrah Group Headquarters (on formation). 28.7.22.

Wing Commanders.—A. V. Bettington, C.M.G. The previous notification concerning this Officer which appeared in R.A.F. Intelligence No. 73 is hereby cancelled. I. T. Courtney, C.B.E., from Headquarters, Coastal Area, to British Naval Mission, Greece, on secondment to the Greek Government. On ceasing to be attached to the Air Ministry. (D.O.E.) 9.8.22. B. A. Playne, D.S.O., M.B., B.A., from R.A.F. Central Hospital (Coastal Area) to Headquarters (Inland Area). 9.8.22. C. R. S. Bradiey, O.B.E., from Half-Pay List to Headquarters, R.A.F. (Iraq). 28.7.22. G. C. St. P. de Dombasle, O.B.E., from No. 1 Group Headquarters (Inland Area) to Headquarters, R.A.F. (Iraq). 28.7.22. G. P. Grenfell, D.S.O., from R.A.F. Depot (Inland Area) to Half-Pay List. 1.8.22. K. G. Brooke, C.M.G., from Air Ministry (D. of E.) to Headquarters (Inland Area). 4.8.22.

Squadron Leaders.—N. M. Martin, C.B.E., from C. and M. Party Donibristle (Coastal Area) to command No. 100 Squadron (Inland Area). 10.8.22. A. W. H. James, M.C., from R.A.F. Cadet College (Ground Wing), Cranwell, to Half-Pay List. 7.8.22. W. W. Shorten, F.R.C.S., from R.A.F. Depot (Inland Area) to Headquarters (Inland Area) (Supernumerary). 14.8.22. H. J. F. Hunter, M.C., from R.A.F. Depot (Inland Area) to No. 10 Group Headquarters (Coastal Area) for Personnel Staff Duties. 10.9.22. W. A. S. Duck, O.B.E., from Headquarters (Coastal Area) to command R.A.F. Central Hospital (Coastal Area). 7.8.22. R. A. G. Elliott, M.B., B.A., from Central Medical Board (Coastal Area) to Headquarters (Coastal Area). 11.8.22. F. E. P. Barrington, from R.A.F. (Cadet) College (Flying Wing), Cranwell, to R.A.F. (Cadet) College (Ground Wing), Cranwell. 3.8.22. Paul Adams, O.B.E., from Air Ministry (D. of E.) to No. 4 Stores Depot.

8.8.22. W. R. Bruce, O.B.E., from No. 1 Group Headquarters (Inland Area) to Headquarters, R.A.F. (Iraq). 28.7.22. J. F. Carruthers, M.D., to Research Laboratory and Medical Officers' School of Instruction (Coastal Area), on appointment to Temporary Commission. For short course of instruction. 31.7.22.

Flight Lieutenants.—H. Cockerell, O.B.E., from Iraq Group Headquarters (Middle East Area) to Headquarters, Iraq Group. 1.2.22. D. H. de Burgh, A.F.C., from Electrical and Wireless School (Inland Area) to R.A.F. Depot (Inland Area) (Supernumerary), whilst attending course of instruction at Cambridge University. 1.9.22. N. R. Fuller, from R.A.F. Depot (Inland Area) to Headquarters, R.A.F. Cranwell (Supernumerary). 26.7.22. R. Halley, D.F.C., A.F.C., from Headquarters (Inland Area) to Half-Pay List. 1.8.22. N. Keeble, D.S.C., D.F.C., from School of Technical Training (Men) (Inland Area) to R.A.F. College (Cadet) (Flying Wing) Cranwell. 8.8.22. Substituted for the previous notification concerning this Officer which appeared in R.A.F. Intelligence No. 74. F. E. J. Coates, from Air Ministry (D. of E.) to No. 4 Stores Depot (Supernumerary). 14.8.22. G. C. Gardiner, D.F.C., from R.A.F. Depot (Inland Area) to No. 7 Group Headquarters (Inland Area) for Personnel Staff Duties. 27.8.22. W. C. Clark, from School of Technical Training (Men) (Inland Area) to No. 12, Wing Headquarters (Ireland). 15.8.22. T. E. Drowley from Air Ministry (D. of E.) to No. 4 Stores Depot. 1.9.22. J. G. F. Heal, M.D., to Research Laboratory and Medical Officers' School of Instruction (Coastal Area), on appointment to Short Service Commission. For short course of instruction. 1.8.22. M. Coghlan, M.B., to Research Laboratory and Medical Officers' School of Instruction (Coastal Area), on appointment to Temporary Commission. For short course of instruction. 1.8.22. J. W. H. Steil, M.B., to Research Laboratory and Medical Officers' School of Instruction (Coastal Area), on appointment to Temporary Commission. For short course of instruction. 1.8.22. A. L. Lingard, from R.A.F. Depot (Inland Area) to the Packing Depot. 9.8.22. W. H. Oakley, from Headquarters, R.A.F. (Ireland), to Inland Area Aircraft Depot (Inland Area) (Supernumerary). 4.8.22. J. W. Harper, M.D., from R.A.F. Depot (Inland Area) to Headquarters, R.A.F. (Middle East). 28.7.22. P. F. Fullard, D.S.O., M.C., A.F.C., from No. 12 Squadron (A. of Rhine) to No. 4 Squadron (Inland Area) for duty as Adjutant. 29.7.22. J. S. Goggin, from R.A.F. Base, Leuchars (Coastal Area) to R.A.F. Base, Gosport (Coastal Area) (Supernumerary). 1.9.22. H. M. Daniel, M.B., from No. 1 School of Technical Training (Boys), Halton, to R.A.F. Depot (Inland Area). 8.8.22. H. A. Tillman, M.D., from Research Laboratory and Medical Officers' School of Instruction (Coastal Area) to No. 1 School of Technical Training (Boys), Halton. 31.7.22.

NOTICES TO AIRMEN

Standard of Time for Meteorological Reports

1. The times used for meteorological purposes are Greenwich Mean Times.

This will apply, from August 1, 1922, to Meteorological reports issued for purposes of aviation, whether the reports are printed, exhibited or issued by radio-telegraphy, radio-telephony, telephone or telegram. It includes the times in the messages referred to in Notice to Airmen No. 80 of 1922.

2. The corresponding British Summer Times (B.S.T.) are obtainable from the Greenwich Mean Times (G.M.T.) by the addition of one hour; e.g., 13.25 G.M.T. is identical with 14.25 B.S.T.

3. The fact that Greenwich Mean Times are used will be indicated as clearly as possible in printed reports and charts for exhibition, and the times quoted in the messages will be followed by the letters G.M.T.

(No. 85, 1922.)

Projected Flights : Special Arrangements

(1) **Meteorology and Wireless.**—When meteorological and wireless facilities, in addition to or different from those normally available are likely to be required, either (a) for a special individual flight, or (b) for regular services on new routes, or (c) through changes in the routine services of aviation companies operating on recognised air routes, particulars should be forwarded (marked "Urgent") to the Director of Civil Aviation, Room 550, Air Ministry, Adastral House, Kingsway, W.C. 2.

In case (a) one week's notice should be given, with full particulars of the route, the proposed date and time of flight and of the W/T or R/T equipment of the aeroplane.

In case (b) the period required for making any necessary arrangements before the commencement of the contemplated service will vary according to circumstances, but the necessary details should be supplied as early as possible.

In case (c) at least 48 hours' notice (Sundays excluded) of proposed changes should be given.

(2) **Navigation.**—Similarly, information of a navigational character and details of ground organisation at home and abroad can be supplied in cases (a) and (b) above.

(3) **General.**—It is in general desirable that the earliest possible intimation of projected flights be given, especially in cases where arrangements are necessitated with foreign countries.

(No. 89 of 1922.)

Pilots' Class B Licences : Lectures in Elementary Meteorology.

1. In order to assist pilots preparing for the examination in Elementary Meteorology which must be undergone by applicants for Class B Licences or renewals of such Licences (as notified in Notices to Airmen Nos. 55 of 1921 and 72 of 1922), arrangements are being made for a short course of lectures on this subject to be given at Croydon aerodrome.

2. The course will commence on about August 21, 1922, and the lectures will be given at times to be arranged to suit the convenience of as large a number of pilots as possible. Those desiring to attend should communicate direct with the Meteorological Officer, Croydon Aerodrome.

3. The following ground will be covered by the lectures:—

(i) **General Meteorology.**—Winds—Trade Winds, Monsoons, etc.—Temperature—Water Vapour in the Atmosphere—Fog and Mist—Formation of Clouds, Rain, Snow and Hail.

(ii) **Synoptic Meteorology.**—Barometric Pressure—Synoptic Charts—Types of Pressure Distribution—Special Phenomena—Forecasting.

(iii) **The Upper Air.**—The Variation of Wind with Altitude The Troposphere and Stratosphere—Pressure, Density and Humidity in the Upper Air—Special Considerations relating to Altimeters.

(No. 91 of 1922.)

SOCIETY OF MODEL AERONAUTICAL ENGINEERS (London Aero-Models Association.)

British records broken 1922 :—

- (1) D. A. Pavely, compressed air-driven model, Wimbledon Common, July 30, 53 secs.
- (2) L. Grey, enclosed tractor rubber-driven R.O.G., Wanstead Flats, August 20, 26 secs.
- (3) L. Grey, enclosed tractor, rubber-driven, hand-launched, Wanstead Flats, August 20, 37 secs.
- (4) C. Hersom, twin pusher R.O.G., Wanstead Flats, August 20, 247 secs.
- (5) C. Hersom, single-tractor waterplane, Wanstead Flats, August 20, 43 secs.

At the last meeting it was decided to call an Extraordinary General Meeting for Thursday, October 5, at Headquarters, 7.30 p.m., for the purpose of electing new officers, etc.

Report from Competition Secretary, Sunday, August 20, 1922, will stand out in the annals of the L.A.M.A. for a considerable time to come. Perfect flying weather prevailed, the first we have had for about four months, and excellent model flying was accomplished which was witnessed by large numbers of the general public on Wanstead Flats. The members congregated for the purpose of attempting to improve the British records.

Mr. C. Hersom was the first member to attract the attention of the time-keepers with his single-tractor waterplane. At his first attempt he broke the official British record by several seconds, the model getting away from the water very smartly. At his second attempt he broke the official record held by Mr. Dutton (of 29 secs.) by 14 secs. By this time Mr. Bedford had tuned up his twin-pusher waterplane and succeeded in making a flight of 49 secs., which will give some of the other members something to think about. Mr. L. Grey was the next to be ready, with his enclosed tractor monoplane, and put up a splendid performance by making a record for this type of machine—R.O.G., 26 secs.; hand-launched, 37 secs. The latter effort was accomplished with his large machine. Mr. C. Hersom was now ready with his twin-pusher R.O.G. monoplane, and started off with an unofficial flight of 117 secs., the model flying at a great height. In his official attempt his model left the ground perfectly, and after one or two circles, during which it gradually gained height and flew away towards Wanstead Park. The power apparently gave out over a small plantation, but the model continued to circle and climb until lost to sight, having been in the air 247 secs., beating the British official record of 145 secs. and incidentally providing all present with a fine exhibition of soaring flight which I am sure would have gladdened the heart of Dr. Hankin. Mr. Hersom received many congratulations from those present, including Mr. J. Louch, the previous holder of the record.

The timekeepers were Messrs. Houlberg, Rippon and Wilson.

■ ■ ■ ■

SIDE-WINDS

As in previous years, British Thomson-Houston magnetos appear to have had a large share in the regularity with which the winning machines lapped the course of the Aerial Derby. The Gloucestershire Aircraft Co.'s "Mars I," with Napier "Lion" engine, was equipped with a B.T.H. Av. 12; the Bristol "Bullet," 400 h.p. Bristol "Jupiter," with a B.T.H. A.Q.9; and Raynham's Martinsyde F.6,200 Wolsley "Viper," with B.T.H. Q.V.8. That this was the fourth successive Derby in which the machines gaining first and second place were fitted with B.T.H. magnetos is one more proof, if such were needed, of the reliability of British Thomson-Houston products. It might be added that in this year's Derby the machines gaining second, third and fourth place in the Handicap were also fitted with B.T.H. "mags.," as were three of the machines flying in the August Open Handicap.

THAT the modern aeroplane is fitted with Smith's instruments is now taken almost as much as a matter of course as is the fact that it is fitted with a control stick or an under carriage. One has come to take it for granted. If a visit is paid to almost any aerodrome in the country it is a fairly safe guess that at least 90 per cent. of the instrument boards carry the well-known black dials. It is, therefore, almost superfluous to state that in the Aerial Derby all the machines were fitted with these famous instruments. While on this subject it might be mentioned, if we are not divulging a secret, that a new Smith's instrument is being experimentally tested. This is a new turn indicator, known, we believe, as an "electro-gyro" type. We hope to be able to refer in some detail to this instrument shortly. Another innovation

which is coming along is a single-dial revolutions counter for twin-engined machines. In this latter instrument two pointers—a red for the port and a green for the starboard engine—are mounted in front of the same dial, and the arrangement greatly facilitates synchronisation of the two engines. Altogether S. Smith and Sons (M.A.), Ltd., are not resting on their laurels, but are doing everything possible to maintain the position which this firm has won during the past years.

In connection with the Aerial Derby, it may be mentioned that the two Bristol machines, the monoplane and the "Bullet," which won first and second place in the Derby Handicap, were doped with Cellon, the Bristol Company having chosen red for their racing colours. The Supermarine flying boat "Sea Lion," which won the Schneider race, was also doped with Cellon, as was the Martinsyde type A, Mark II, described in last week's issue of FLIGHT. The scheme chosen for the latter machine was the well-known Cellon aluminium dope, which certainly added considerably to the appearance of the Martinsyde.

■ ■ ■ ■

PUBLICATIONS RECEIVED

Aircraft Year Book, 1922. Aeronautical Chamber of Commerce of America, New York City, U.S.A.

Income Tax and Super-Tax, 1842-1923; Tabular View. Oliver and Boyd, 33, Paternoster Row, E.C. Price 1s. net; by post 1s. 2d.

Report No. 132. Aeronautic Instruments, Section VIII. Recent Developments and Outstanding Problems. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Revue Juridique Internationale de la Locomotion Aérienne. July, 1922. Paris: Edition Aérienne, 4 rue Tronchet.
"Send to Barimar." Barimar, Ltd., 10, Poland Street, London, W. 1.

Technical Note No. 100. Theory of the Slotted Wing. Lecture by A. Betz. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Technical Note No. 101. Comparing Maximum Pressures in Internal Combustion Engines. By S. W. Sparrow and S. M. Lee. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

■ ■ ■ ■

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motors
The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

Applied for in 1921.

Published August 24, 1922.

- 5,771. RAUL, MARQUIS OF PATERAS PESCARA. Screw propellers. (159,205.)
8,805. E. H. J. C. GILLET. Rotary I.C. engines. (183,517.)
9,848. LUFTSCHIFFBAU ZEPPELIN GES. and P. JARAY. Passenger airship for long-distance travel (161,180.)
11,201 and 11,203. A. G. BELL and F. W. BALDWIN. Hydroplanes, hydro-aeroplanes, etc. (163,034 and 163,036.)
22,385. P. W. PETTER and PETTERS, LTD. Lubrication of I.C. engines. (183,728.)
29,540. H. JUNKERS. I.C. engines. (171,115.)

FLIGHT

The Aircraft Engineer and Airships

36, GREAT QUEEN STREET, KINGSWAY, W.C. 2.

Telegraphic address: Truditur, Westcent, London.

Telephone: Gerrard 1828.

SUBSCRIPTION RATES

"FLIGHT" will be forwarded, post free, at the following rates :—

UNITED KINGDOM

ABROAD*

	s.	d.		s.	d.
3 Months, Post Free...	7	7	3 Months, Post Free...	8	3
6 " " " " " " " "	15	2	6 " " " " " " " "	16	6
12 " " " " " " " "	30	4	12 " " " " " " " "	33	0

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates.

* European subscriptions must be remitted in British currency

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.

Should any difficulty be experienced in procuring "FLIGHT" from local newsvendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.